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The Prevalence and alleged Increase of Scrofula. BY BENJAMIN PHILLIPS, ESQ., F.R.S.

[Read before the Statistical Society of London, May 18, 1846.]

THE paper which I have the honour to read to you this evening, is founded upon returns which are already before the public in my work on Scrofula*. It seemed to me, therefore, doubtful whether the Society would be content, under those circumstances, to receive the communication at all. I am told, however, that the Council are desirous to foster inquiries into Vital Statistics, and that no difficulties would be put in the way of the reception of the present contribution, which relates to an important item in the mortality tables of this country.

I have carefully stripped the paper of all medical technicalities, and I have greatly condensed the returns upon which the opinions I have expressed are founded, so as to make it as nearly as possible a contribution to purely Vital Statistics.

The object I have sought to accomplish, is to ascertain how far Scrofula may be said to be a prevalent disease in this country—and how far the current idea is correct, that it belongs to a class of diseases, which the crowding and bad air of towns are rendering more frequent at present than they were formerly.

The belief that Scrofula and Consumption are peculiarly prevalent in this country, and that with the exception of Holland, no European country furnishes so many victims to them, has been so generally entertained and acquiesced in, that scarcely any attempt has been made to ascertain whether they deserve the title which they have long enjoyed, of being considered as *par excellence* English diseases.

The belief in their prevalence has been fostered by general statements which have no definite signification, are out of place in every scientific inquiry, where the statements can be verified by numbers, and are peculiarly so in a society where facts have to be stated in figures.

At an early period of my investigations, I became fully sensible of the necessity of introducing a more precise method of conducting the inquiry than that which had been previously adopted. To say that Scrofula is extremely frequent in one place, and rarely seen in another, is to make a statement which has no absolute value, because so far as I know, it has always been made without particular observation, or accurate comparison, and yet it is upon such statements that theories are constructed.

In submitting the results of the inquiry to this Society, I have taken it for granted that the Society would concede to me, that the medical elements of the inquiry were correctly defined. Whether those elements be strictly correct or not, they are correct for the purposes of comparison. It has therefore seemed to me desirable, to exclude as far as possible all medical questions from the present inquiry.

The means which I have taken to ascertain how far Scrofula prevails in our own country are the following:—I have examined myself,

* "Scrofula; its Nature, its Causes, its Prevalence, and the Principles of Treatment."—BAILLIÈRE.

or by the aid of others, a large number of children in schools, in union houses, in factories, and elsewhere. I have taken a similar course with respect to adults. I have availed myself of a large number of Hospital and Dispensary Returns, which may fairly represent the prevalence of the disease when it comes under treatment. And as correlative evidence, I have procured from the Army Medical Board Returns of Scrofula among Recruits; and from Dr. Baly and others like Returns respecting the inmates of Prisons; and I have taken the Reports of the Registrar-General as evidence of the destructive effects of the disease.

The result of the examination of children is to show, that of 133,721 examined, in many districts,—33,271, or over 24 per cent., presented certain marks of Scrofula; but those marks could only be detected by the eye in 4,127 instances.

In Union Houses the number was somewhat above, in Charity Schools rather below that average. That difference it is easy to understand. Those actually suffering severely did not appear in the school, whilst those in a similar condition were included in the Union House Returns.

These numbers may not exactly represent the prevalence of Scrofula in this country, because an examination of the children found in schools and factories, proves nothing as to children whose condition of suffering from Scrofula prevents them from attending those schools and factories: neither does the examination of children in Union Houses give us a more correct result, because sickly children accumulate in such establishments, while healthy ones are sent out. To correct my results, it was necessary to ascertain the proportion absent from schools, and to ascertain as nearly as might be, the cause of their absence: and this I have done.

I find, then, that when thus corrected, the marks of Scrofula obvious upon simple inspection, among the children of the poor of England and Wales, between the ages of 5 and 16 is, as near as may be, but rather under, $3\frac{1}{2}$ per cent.

But that proportion does not represent the actual prevalence in the whole population; for among adults, similar marks are not found to exist in more than $1\frac{1}{2}$ per cent. of the population.

Taking, therefore, the gross population, the marks of Scrofula are not obvious upon simple inspection in quite $2\frac{1}{4}$ per cent. of the people of this country. We must now test the accuracy of our actual examinations by collateral evidence.

Of 255,297 cases under treatment at Hospitals and Dispensaries, 3187, or 1·2 per cent. are registered Scrofula. It will be borne in mind, that the results of the examination of adults, were to discover marks of the disease in 1·5 per cent.—and all do not come under treatment.

Of 95,586 young men examined for enlistment, 800, or under 1 per cent. were rejected for marks of Scrofula.

Many persons would be inclined to think, that in the examination of Recruits there must be great variety in the results, yet if the Returns be inspected, it will be found that there is a considerable uniformity in the ratio of men found unfit for military service from any given cause. When the numbers are very small, considerable discrepancies are

observable, but as numbers are increased these discrepancies disappear. It has been observed by Mr. Marshall, that in the occurrence of human disabilities, there is a law which determines the proportion of men who are disabled by infirmities, and thereby rendered unfit for the Army. The range of the ratio of rejections during the war did not exceed 5 per cent., although the duties of the *dépôt* were performed by a succession of staff surgeons—a convincing proof that there is a natural law which regulates the proportion of physical disabilities among masses of the population. That law is equally apparent in the prevalence of disease; for although if we take any disease, and observe its occurrence through each one of a series of years, small diversities will occur, yet in the main, and during a period sufficiently prolonged for a fair comparison, the proportion will be preserved. There is a disease which would seem to be in an especial manner under the dominion of accident, namely, Lock-jaw; but I know nothing better calculated than this very disease to enforce a conviction, that what so clearly appears to be the result of accident, is really under the dominion of a settled law.

The next test we apply to ascertain the accuracy of our first estimate, is the result of the examination of convicts at the Millbank Penitentiary, made by Dr. Baly.

In the year 1840, of the prisoners admitted into that establishment, he examined 1052, and found that 14, or 13·3 per 1000, had external marks of Scrofula. In the year 1844 he examined 3249 male convicts, of whom 44, or 13·5 per 1000, had external marks of Scrofula.

It is thus seen, that though derived from such different sources, there is a striking concurrence in the results of the evidence I have collected, and that agreement constitutes a strong reason for believing that my data do very nearly represent the actual prevalence of the disease.

We see that the returns of cases of Scrofula found among our ordinary population are singularly confirmed, not only by the registers of Hospitals and Dispensaries, but also by the examination of recruits and of convicts, and I think we are thus justified in regarding as near the truth our estimate of the prevalence of Scrofula in England and Wales. That is to say, that scars are apparent in about $1\frac{1}{2}$ per cent.; glands so far enlarged as to be perceptible, on simple inspection, in less than 3 per cent.; and that glands are sufficiently enlarged to be detected by the finger in $24\frac{1}{2}$ per cent. of those among the children of the poor, who are under 16; and in 8 per cent. of those above that age; or, taking the whole population, in 10 per cent.; and that something less than 3 per cent. of the people are under treatment constantly for the disease in its various forms.

We have now obtained an estimate of the actual prevalence of Scrofula in England and Wales, but to ascertain whether it be entitled to the distinctive appellation of the English disease, we must next determine how far the disease prevails in other countries.

The means I possess for instituting a comparison are as follows. I can show the prevalence in many other countries by the examination of children, and in France by that of recruits also.

In the Orphan Asylum at Lisbon, Dr. Rozas examined 800 children, of whom 279, or 35 per cent., were Scrofulous. In the Orphan Asylum at Amsterdam, of 495 children 209, or 42 per cent., were

Scrofulous. At the Orphan Asylum at Munich, two-thirds of the children it is said were Scrofulous. At the Royal Orphan Asylum at Vienna, of 412 under treatment, 45, or 11 per cent., were for Scrofula. At the Frederic's Orphan Asylum at Berlin, of 353 children examined, 185, or nearly 53 per cent., were Scrofulous. At St. Petersburg, of 840 examined, 343, or nearly 41 per cent., were Scrofulous. At the Imperial Foundling Hospital, Moscow, of 15,515 examined, 1294 had *evident* marks of Scrofula. At Boston, U. S., of 146 examined, 106, or 70 per cent., were Scrofulous. At Philadelphia, of 2998 examined, only 13 presented the indicated marks of Scrofula. At Beyrout, Cairo, Alexandria, and Greece, 607 children were examined, of whom 132, or more than 21 per cent., were Scrofulous. In Calcutta Dr. Stewart examined a school of 504 native children, of whom 300 were Scrofulous. At Madeira, of 405 children examined, 60 were Scrofulous.

The evidence now offered shows most conclusively, as I apprehend, that the notion that Scrofula is eminently an English disease is incorrect; and that I am warranted in stating, that there is no European country, at least in so far as our information extends, in which the people are more free from the disease than England and Wales! And with respect to France, the results of the examination of recruits tend to the same conclusion. They show that, in raising a contingent of 86,000 men, the rejections for Scrofula amount to 1754, or 2 per cent.

It is stated by many persons, among others by Sir James Clark, that Scrofula and Consumption are observed more frequently at present than formerly; and the fact is, that the destruction of life by those diseases at present, amounts to one-fifth of the general mortality of the country, impresses upon some minds the belief, that the evil could not have fallen so heavily on our population in former times.

Sir James Clark has shown in his work on Consumption, that from 1700 to 1750, the deaths from that disease in London increased from 4 to 6 in every 1000 of the population, and that since the last period they have remained stationary.

The materials for coming to a correct conclusion on this point are scanty, and are very much confined to the population included within the bills of mortality. The first uninterrupted series of weekly bills of mortality commences on the 29th December, 1603, nearly two centuries and a half ago, at which period those bills comprised only 13 out parishes, in addition to 96 parishes within the walls of the City of London. Subsequently to 1603, additional parishes were included. In 1625, the number of burials in every parish was for the first time published. The report of diseases and casualties was first published in 1629; it then included 26 parishes, besides the 97 within the walls. It may be urged that but little confidence can be placed on those tables of disease. To some extent, this is no doubt true; but it is also true, that in the earlier period, the rule was to appoint in each parish "searchers," who, on a death being announced, visited the house of the deceased, and inspected the body, inquiring the age and the disease which occasioned the demise. I do not mean to say that a return so made would exactly represent the causes of death, but, at all events, it is the nearest approximation to accuracy which we possess, and, in my

opinion, it is near enough to justify a comparison. If we look at the deaths from consumption, which form so prominent a feature in the catalogue of diseases, and observe the uniformity of their relation to the population through a long series of years, it constitutes a good ground for believing that there is, at the least, a considerable approach to accuracy. And with respect to the disease popularly known as the King's Evil, the chances of error seem fewer than in most diseases, because the marks are external, and they were well known.

For the evidence which I now propose to use, I am indebted to Mr. Marshall's Tables, published in 1832; and in order to ensure as much accuracy as seems practicable, I shall discard the earlier returns, and begin with 1750 as my starting point.

It will be most convenient to limit the population and the deaths to the districts comprised within the bills of mortality, and I shall give the mortality, whether general or special, in an average of a decennial period, ending at the commencement of the year named in connexion with such mortality.

In 1750, the population was 654,000; the general mortality 25,350, or 1 in 26; the deaths from consumption 4530, or 1 in 144; and the deaths from scrofula 22, or 1 in 29,727. In 1801, the population was 777,000, the general mortality 19,680, or 1 in 40; the deaths from consumption 5028, or 1 in 154; and the deaths from scrofula 5, or 1 in 155,400 of the population. In 1811, the population was 888,000, the general mortality 18,575, or 1 in 48; the deaths from consumption 4,511, or 1 in 196; and the deaths from scrofula under 5, or 1 in 177,600 of the population. In 1821, the population was 1,050,000, the general mortality 19,056, or 1 in 55; the deaths from consumption 4,491, or 1 in 233; and the deaths from scrofula 10, or 1 in 105,000 of the population.

In 1831, the population was 1,223,000, the general mortality was 20,910, or 1 in 61; the deaths from consumption were 4,735, or 1 in 258; and the deaths from scrofula 9, or 1 in 135,888 of the population.

The small number of deaths from scrofula within a period of 10 years, subjects any calculation which may be based upon such a period, to be greatly influenced by accidental or special or temporary causes, and I will therefore give the aggregate deaths from scrofula between the 1st of January, 1700, and the 31st of December, 1750; between the 1st of January, 1751, and the 31st of December, 1800; and between the 1st of January, 1801, and the 31st of December, 1830. Now during the first of those periods the deaths were 2,076, or 41 per annum; during the second 579, or 11 per annum; and during the third period 248, or 8 per annum. And estimating the mean population within the bills of mortality between 1700 and 1750 at 660,000, between 1750 and 1800 at 715,000, and between 1800 and 1830 at 1,000,000, the deaths from scrofula on the average of a year, in the first period will be 1 in 16,097, in the second period 1 in 65,000, in the third period 1 in 125,000 of the population. It will thus be seen, that whilst in 1750 the general mortality was 1 in 26, and in 1801, 1 in 40, it was reduced in 1831 to 1 in 61; that whilst the deaths from consumption were in 1750, 1 in 144, and in 1801, 1 in 154, they were reduced in 1831 to 1 in 258; and that

whilst the deaths from scrofula averaged between 1700 and 1750, 1 in 16,097 of the population, and between 1750 and 1800, 1 in 65,000, they were reduced between 1800 and 1830 to 1 in 125,000, and in the last 10 years of that period to 1 in 135,800 of the population.

Such is the best evidence which can be obtained of the prevalence of what are regarded as Scrofulous diseases, namely, Scrofula and Consumption, at different periods in the last two centuries.

Although the evidence be to a certain extent defective from uncertainty in the designation of the disease in the bills of mortality, it has a certain value with reference to all diseases, and a very real one as regards Consumption and King's Evil.

Tried then by such tests as I have been enabled to apply, which though not strictly accurate are the best we possess, and which when used with caution constitute a fair body of evidence on the point, the conclusion seems a fair one, that Scrofula is much less prevalent in the present day than it was in the 17th and 18th centuries.

Mortality of the Madras Army: from Official Records.

By LIEUT.-COLONEL SYKES, F.R.S.

VERY vague,—indeed, mistaken ideas, obtaining in Europe with respect to the value of life in India, both European and native, and more particularly so regarding the extent of the mortality arising from that, no doubt, appalling scourge, the Spasmodic Cholera, I have thought it desirable to record in the pages of our Journal the following per centages of deaths, during five years in the Madras Army, a body of about 1,580 European Officers, 3,762 European soldiers, and 62,513 Native soldiers, exclusive of the Royal army, distinguishing Europeans from Natives, and the per centage deaths from all causes, from deaths when Cholera is excluded. It will be a consolation to those connected with India, on referring to these facts, to find that an exaggerated view is generally taken of the diminished value of life in India, and of the loss occasioned by Spasmodic Cholera.

	1840	1841	1842	1843	1844
EUROPEAN TROOPS.					
Deaths from all causes	4·333	3·130	4·205	4·905	2·810
Deaths excluding those from Cholera	3·843	2·969	2·855	3·248	2·397
NATIVE TROOPS.					
Deaths from all causes	1·136	1·460	2·634	2·371	1·994
Deaths excluding those from Cholera	0·965	1·126	1·600	1·144	1·284

It will thus be seen, that amongst the Europeans the deaths from Cholera were, in the respective years, only 0·490, 0·161, 1·350, 1·657, and 0·423, of the whole deaths; and amongst the Natives, 0·171, 0·334, 1·034, 1·227, and 0·710, of the whole deaths.

At a future period I may supply a similar statement for the armies of Bengal and Bombay.